Introduction

This section begins by having students think as airport planners, answering questions like **Where Should A New Airport Be Located?** Students research local weather conditions, economic (census) data, geology, and other relevant information. Most of this information is gathered from web sites, compiled into charts and graphs, analyzed and referenced with other information, mathematically and graphically. Finally, the students establish where a new airport should be located.

In Activity II, students investigate the possible links between **Travel and the Spread of Disease**. They start by looking at historical outbreaks of diseases and their spread through travel and contact between infected and uninfected people. Modern diseases are also discussed, and students will look for possible links to travel trends. Finally, students have the opportunity to explore genetic diseases and how it is possible for diseases to be spread between species (Mad Cow Disease is an example).

Activity I: Where Should A New Airport Be Located?

Part A - How do we choose where to build a new airport?

1. _____

2. _____

3. _____

4. _____

5. _____

Part B - Select appropriate counties

Pick three non-adjacent counties where there are not commercial / international airports, but you think there should be, and write them here.

1. County: _____ State: _____

2. County: _____ State: _____

3. County: _____ State: _____

Part C - Weather

Weather is one of the most influential factors in flight delays, cancellations, and other problems. Determine the best county to have your airport in by collecting information from http://www.ncdc.noaa.gov/ol/climate/stationlocator.html

1. Pick the county button and enter your county name, and the database should retrieve several weather stations in your area. Be careful! Sometimes a county name will occur in more than one state!

2. Pick any station in your county to retrieve data from as you will be retrieving county data, not city data.

3. Once the station data appears, scroll down the page and retrieve Storm Event data ("all possible storm events").

Activity I: Where Should A New Airport Be Located?

4. Fill in the charts on the following pages with what you find. Use one sheet for each county.
   - Be sure to show a key or legend somewhere with any acronyms or abbreviations you use, so someone else can read and understand your charts!
   - If there is an extensive list, summarize the events as best as possible.

For instance, I can put all Thunderstorm Wind (Tstm wind) records together, as follows:

Location	Month	Time	Type	Mag	Deaths	Injuries	Property Damage	Crop Damage
Corvalis, Philomath	9, 10	1400, 1600	Tstorm wind	N/A	0	1, 0	$20K, $0	$0

5. Evaluate your information by drawing a bar graph (use a seperate sheet of graph paper) comparing the number of incidences and month of the year. Use different colored bars to show the different types of events.

6. Almost any kind of storm provides reason for closing an airport. Which county is the best location for your airport? Create a response by listing the pros and cons of each site on another sheet of paper.

7. Final decision:

_____ County, _____ is the best site for the airport.

Activity I: Where Should A New Airport Be Located?

Name Date

County:

Location	Month	Time	Type	Mag	Deaths	Injuries	Property Damage	Crop Damage
Total # of Events: _____								

Part D - Census Data

Use census information from http://www.census.gov to fill out the following chart for the single county you picked. Most of this information will be a part of the economic census and income and poverty estimates. If the information is not available, write "N/A."

Census Population Data

	Location (Latitude & Longitude)	Population for year: _____	% Pop. Change since prev. year	% Poverty Estimate	Median Household Income
County					
State					
USA					

Part E - Evaluation

Evaluate the information from the County Census data tables.

1. If the governor were to evaluate your decision to place an airport in this county, would he or she agree with your idea?

   List 3 reasons why:

   a) _____

   b) _____

   c) _____

Activity I: Where Should A New Airport Be Located?

2. Would he or she disagree?

List 3 reasons why:

a) _____

b) _____

c) _____

3. If the president were to evaluate your decision to place an airport in this county, would he or she agree with your idea?

List 3 reasons why:

a) _____

b) _____

c) _____

4. Would he or she disagree?

List 3 reasons why:

a) _____

b) _____

c) _____

Activity I: Where Should A New Airport Be Located?

Name Date

County Census Economic Data

	Type of Business	Number Established	Sales ($ million)	No. of Jobs	Output per Capita	Jobs/1000 pop. (% of state)	Jobs/1000 pop. (#)	Establishments per 100K pop. (% of state)
County								
State								
USA								

Activity I: Where Should A New Airport Be Located?

Part F - Let's decide where in your county the airport should go.

The governor and president advise you to consider (a) funding, (b) geology / soil type, (c) vacant land space, and (d) tourist attractions.

Funding: Use http:www.census.gov to determine the top 3 towns in the county. This information should be found at the bottom of the page for economic census information of the county you picked.

Business Income Data

City or Town	Population	Business	# of Businesses Established	Sales ($/yr)
1.		Retail		
		Wholesale		
		Services		
2.		Retail		
		Wholesale		
		Services		
3.		Retail		
		Wholesale		
		Services		
Mean		Retail		
		Wholesale		
		Services		

Check with your teacher to see if more statistical analysis is required.

Activity I: Where Should A New Airport Be Located?

Use the data from the Business Income Data table to calculate the following:

Mean Business Income

City or Town	Retail		Wholesale		Services	
	$ Produced/ person	# Estab./ person	$ Produced/ person	# Estab./ person	$ Produced/ person	# Estab./ person
1.						
2.						
3.						
Mean						

Create a bar graph to illustrate the above information, in order to help you make your decision about which city to pick.

Activity I: Where Should A New Airport Be Located?

Part G - Geology/Soil Type

Geology is important for construction of airports for a variety of reasons. Most importantly, one does not want to construct an airport on seismically active areas, nor does one want to construct an airport on unstable or marshy ground.
This would be a perfect place to review Earthquake safety procedures and the waves produced by earthquakes. Several guides are available that discuss soil type and its stability rating with respect to earthquakes. In addition, there are several databases that will list earthquakes that have occurred or occurred recently (University of Texas has a real-time earthquake site link). Looking at database information, student statisticians could get an idea of the likelihood of earthquakes in the region and/or the amount of damage anticipated from one.

Use http://www.usgs.gov to investigate soil types and earthquake-prone regions. Click on "USGS by State" to obtain the appropriate state information. You can then narrow your search if necessary by using key words.

Some maps are slow to download, as they are quite large, and some maps are not available on the web page. Most USGS maps may be easier to obtain through a USGS state office or a college or university that has a mapping-related department.

Part H - Other Factors

Use an encyclopedia, map, and/or other information to get an idea of the other topics (land space, commuter access, and tourist attractions), to help make your decision.

The airport will be in _____, and will be located in the region shaded on the attached map.

This town was chosen for the following reasons:

1 _____

2. _____

3. _____